

Name: \_\_\_\_\_

CVEN 664 – Water Resources Planning and Management  
Fall Semester 2007  
Dr. Kelly Brumbelow, Texas A&M University

Midterm Exam #1

**Open-book, Open-notes (3 pages, 5 questions); Time allowed: 60 minutes**

1. Describe 3 techniques of demand management for M&I water supply. For each, provide some quantitative estimate of its effectiveness. (15 points)

2. Describe how hydropower is used in a “peaking” operation. What is the common effect of peaking operations on downstream riverine ecosystems? (10 points)

The following 3 questions address the Tucson, Arizona, case study:

3. The SYSTEM of interest in the case study is the city of Tucson. Briefly describe major components of the SYSTEM and its most important water INPUTS and OUTPUTS. (20 points)
4. Describe the MODELS that are employed by the supporters and opponents of Proposition 200 with respect to clause (d) “The right to a permanent and sustainable supply.” That is, how does each group conceive the SYSTEM will behave if clause (d) is implemented upon approval of the proposition. Be sure to note important PROJECTIONS that are used. (25 points)
5. In this system, two crucial NOTATIONS to consider are “Recharge” and “Toilet-to-tap.” What physical realities of the SYSTEM are represented by these NOTATIONS? Drawing upon the concepts of hydrology and water quality/waste assimilation discussed in class, use the Principle of Indifference to describe the conflict between Proposition 200 supporters and opponents with respect to these NOTATIONS and synthesize a better understanding of the true SYSTEM dynamics. (30 points)

Attach additional sheets as necessary.